

REMARKS/ARGUMENTS

This Amendment is being filed in response to the Office Action dated January 21, 2010. Reconsideration and allowance of the application in view of the amendments provided above and the remarks to follow are respectfully requested.

Claims 1-14 are pending in the Application. Claims 1, 13 and 14 are independent claims. Claim 14 is added by this amendment.

The Applicant appreciates the courtesies extended by Examiners Lam and Mengistu during the conference calls on April 13, 2010, between Examiners Lam and Mengistu and Gregory L. Thorne, representative for the Applicant (hereinafter, the "Representative"). In accordance with the requirements of MPEP §713.04 and 37 CFR §1.133, following is an Interview Summary produced by the Representative.

During the conference call, the matters discussed and results of the discussion are:

- We discussed the differences in the claims and the cited prior art, namely U.S. Patent No. 6,507,330 to Handschy. The Representative explained, that Handschy provides DC-balancing by applying signals at a time when the pixel is not illuminated while the present applicant provides DC-balancing while the pixel is being driven according to the input image data that produces the displayed image. However, no consensus was reached during the conference call.

In the Office Action, claims 1 and 13 are rejected under 35 U.S.C. §112, second paragraph, regarding the language, "the image that is fitting the input image data ..." Applicant respectfully traverses this rejection to claims 1 and 13. However, in the interest of advancing consideration and allowance of the claims, Applicant has elected to amend

claims 1 and 13 to clarify that which is recited in the claims. Support for the amendments to claims 1 and 13 is provided by the present application, page 2, line 18 to page 3, line 15., which makes clear that in accordance with the present system, (emphasis added) "[a] gray scale of a particular pixel depends on the level of the drive voltage and/or a duration of the drive period during which the drive voltage is present across the pixel]. The driver supplies a sequence of drive voltages across the pixel during corresponding successive drive periods. The drive voltages and the duration of the drive periods have to be selected to obtain an optical state of the pixel fitting the image signal to be displayed. A DC-balancing circuit controls the amplitudes of the drive voltages and/or durations of the drive periods for every pixel separately (or for relatively small sub-groups of adjacent pixels) to obtain a substantially zero time-average value of the drive voltage across each of the pixels. This control of the amplitude of the drive voltages and/or the duration of the drive periods allows minimizing the image retention, without requiring reset pulses for all the pixels." In addition, claims 1 and 13 are amended to make clear that the claims are directed to a (emphasis added) "display apparatus for displaying an image" and that "image retention reducing compensation" are applied "while the pixel is being driven according to the input image data that produces the displayed image ...". It is respectfully submitted that the clarifications to claims 1 and 13 overcome the rejection of claims 1 and 13 under 35 U.S.C. §112, second paragraph. Accordingly, it is respectfully requested that the rejection under 35 U.S.C. §112, second paragraph, be withdrawn.

In the Office Action, claims 1-3, 7-9 and 13 are rejected under 35 U.S.C. §102(e) over U.S. Patent No. 6,507,330 to Handschy, et al. ("Handschy"). Claim 4 is rejected under

35 U.S.C. §103(a) over Handschy in view of Admitted Prior Art. Claim 5 is rejected under 35 U.S.C. §103(a) over Handschy in view of U.S. Patent No. 6,507,330 to Abramson, et al. ("Abramson"). Claims 6 and 10-12 are rejected under 35 U.S.C. §103(a) over Handschy in view of U.S. Patent No. 6,961,047 to Katase ("Katase"). It is respectfully submitted that claims 1-14 are allowable over Handschy alone and in view of any combination of Admitted Prior Art, Abramson, and Katase for at least the following reasons.

It is not disputed that Handschy shows DC-balancing of a pixel display (See, Handschy, Col. 13, lines 36-42 and Col. 9, lines 31-44, as cited in the Office Action, page 4). However, it is respectfully submitted that Handschy provides two separate and different pixel drive voltage periods, wherein during the first pixel drive voltage period, the drive voltage and its duration provide a gray scale in the pixel for producing an image, and wherein during the second pixel drive voltage period, a compensation voltage in a relatively short duration is provided for the purposes of DC-balancing, and not for producing a gray scale in the pixel for producing the image. (See, Handschy, FIG. 3 and accompanying description contained in Handschy, Col. 9, lines 50-57.)

Handschy shows (emphasis added) "operating a liquid crystal display during a given period of time, the method using input image data to control how the display is operated, the display creating visible images at a viewing area. The method includes applying a first series of voltage signals to the liquid crystal display during one portion of the period of time, the first series of voltage signals being arranged to produce an image as represented by the input image data. The method also includes allowing the display to be viewed at the viewing area, while the image is being produced by the first series of voltage signals

applied to the display, by allowing illumination light to be directed to the display and from the display to the viewing area. The method also includes applying a second series of voltage signals to the liquid crystal display during another portion of the period of time, the second series of voltage signals being arranged to produce an inverse image, the second series of voltage signals being related to the first series as being inverted in polarity relative to the first series, having an increased magnitude relative to the first series, and having a shorter time duration than the first series. The method also includes substantially preventing the display from being viewed at the viewing area, while the inverse image is being produced by the second series of voltage signals applied to the display, by substantially preventing illumination light from reaching the viewing area." (See, Handschy, Col. 5, line 55 through Col. 6, line 13.)

Handschy in Col. 9, lines 45-48 states that "Referring now to FIG. 3, a first embodiment of a method in accordance with the invention which may be used to operate a display system such as display system 10 will be described." It is respectfully submitted that this section of Handschy merely states that the following embodiment described in Handschy, operates in accordance with FIG. 3, namely with illumination that is turned off during act 106.

Handschy in Col. 10, lines 41-45 states that "[t]his shorter second portion of the given period of time T insures that the illumination arrangement is more efficiently utilized than would be the case if a conventional DC-balanced system that switched off the illumination arrangement for half of the time were utilized." It is respectfully submitted that this section of Handschy is described in this paragraph and the preceding paragraph of

Handschy as a shortened second time period, the period when the illumination is turned off, which is shorter BUT NOT ELIMINATED from the example where the additional signal is provided for a duration as long as the image signal. It is respectfully submitted that this section of Handschy merely states that the following embodiment described in Handschy, operates in accordance with FIG. 3, namely with illumination that is turned off during act 106. It is respectfully submitted that nowhere within the four corners of Handschy does it teach, disclose or suggest that image retention reducing compensation is provided while the pixel is being driven according to the input image data that produces the displayed image.

Accordingly, the display apparatus of claim 1 is not anticipated or made obvious by the teachings of Handschy. For example, Handschy does not teach, disclose or suggest, a display apparatus for displaying an image that amongst other patentable elements, comprises (illustrative emphasis added) "a driver for supplying a sequence of the drive voltages across the pixel during corresponding successive drive periods, wherein each of the sequence of drive voltages are applied according to input image data that produces the displayed image; and a DC-balancing circuit comprising a controller for providing image retention reducing compensation to the sequence of drive voltages by adjusting at least one of the drive voltage parameters, for determining a time-average value of the drive voltages for the pixel, and for obtaining a substantially zero value of the time-average value of the drive voltage for consecutive fields of the pixel while the pixel is being driven according to the input image data that produces the displayed image" as recited in claim 1, and as similarly recited in claims 13 and 14. Admitted Prior Art, Abramson, and Katase are

cited for allegedly showing features of dependent claims and as such, do not cure the noted deficiencies in Handschy.

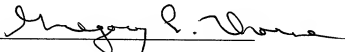
Based on the foregoing, the Applicant respectfully submits that independent claims 1, 13 and 14 are patentable over Handschy and notice to this effect is earnestly solicited. Claims 2-12 respectively depend from claim 1 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims.

Accordingly, separate consideration and allowance of each of the dependent claims is respectfully requested.

In addition, Applicant denies any statement, position, or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicant reserves the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicant has made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By 

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